

## ABSTRACT OF THE DISCLOSURE

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A low-speed subscriber extension type system for extending the capacity of low-speed subscribers in an asynchronous transfer mode (ATM) switching system is disclosed. In the system, a low-speed subscriber board interfaces with a switch link through a system backboard, receives a cell transmitted from the switch link, then multiplexes/demultiplexes the received cell through a UTOPIA interface after a switch link and ATM layer processing. A low-speed subscriber physical layer board transmits data, which is physical layer-processed in the low-speed subscriber board, to a low-speed subscriber, and serializes a cell transmitted from the low-speed subscriber board into a clock and data before transmission. A low-speed multiplexing/demultiplexing board recovers a clock and data from the serial data received from the low-speed subscriber physical layer board through a cable, converts the clock and data to parallel data in a word unit, transmits the parallel data to a corresponding low-speed extension board through a low-speed bus, reads cells received from a given low-speed extension board, multiplexes the read cells, and transmits the multiplexed cells to the low-speed subscriber physical layer board through a link processor. Each low-speed extension board exchanges a cell with the low-speed multiplexing/demultiplexing board through a low-speed bus, performs physical layer processing on the cell of the corresponding board, and transmits a received cell to the corresponding subscriber through the low-speed extension physical layer board.